

Annual Report

SUBCOMMISSION ON PERMIAN STRATIGRAPHY ANNUAL REPORT 2007

1. TITLE OF CONSTITUENT BODY and NAME OF REPORTER

International Subcommittee on Permian Stratigraphy (SPS)

SUBMITTED BY:

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2. OVERALL OBJECTIVES, AND FIT WITHIN IUGS SCIENCE POLICY

Subcommission Objectives: The Subcommission's primary objective is to define the series and stages of the Permian, by means of internationally agreed GSSP's, and to provide the international forum for scientific discussion and interchange on all aspects of the Permian, but specifically on refined regional correlations.

Fit within IUGS Science Policy: The objectives of the Subcommission involve two main aspects of IUGS policy:

1. The development of an internationally agreed chronostratigraphic scale with units defined by GSSP's where appropriate and related to a hierarchy of units to maximize relative time resolution within the Permian System; and
2. Establishment of frameworks and systems to encourage international collaboration in understanding the evolution of the Earth during the Permian Period.

3. ORGANIZATION

The Subcommission has an Executive consisting of a Chairman, a Vice-Chairman, and a Secretary; all three are Voting Members of the Subcommission. There are sixteen total Voting Members representing most regions of the world where Permian rocks are exposed.

The objectives of the Subcommission are pursued by both stratigraphic and thematic Working Groups that are disbanded upon completion of their directed task. For example, the Working Groups on the Carboniferous-Permian Boundary, on the Guadalupian stages (Middle Permian), on the base-Lopingian boundary (base-Wuchiapingian Stage), and on base-Changhsingian have been disbanded upon the successful establishment of their defining GSSP's and ratification by IUGS. The current working groups include the following: 1. Cisuralian stages, 2. Continental Permian, 3. Transitional biotas as gateways for global correlation, 4. Neotethys, Palaeotethys,

and S. China Correlations, and 5. International Lopingian Working Group.

3a. Officers for 2004-2008:

Chair: Professor Charles M. Henderson, University of Calgary
Vice-Chair: Dr. Vladimir Davydov, Boise State University
Secretary: Dr. Shuzhong Shen, Nanjing Institute of Geology and Palaeontology

3b. Officers for 2008-2012: There were no objections from the voting membership, nor from the membership at-large, and therefore the above officers will continue in their respective capacities for a second term.

Chair: Professor Charles M. Henderson, University of Calgary
Vice-Chair: Dr. Vladimir Davydov, Boise State University
Secretary: Dr. Shuzhong Shen, Nanjing Institute of Geology and Palaeontology

SPS website is located at <http://www.nigpas.ac.cn/permian/web/index.asp>. This site includes all back issues of *Permophiles* in downloadable PDF format (#1 in 1978 to #49 June, 2007). A link to *Permophiles*/Permian research has also been established at <http://www.geo.ucalgary.ca/asrg>.

4. INTERFACES WITH OTHER INTERNATIONAL PROJECTS

SPS interacts with many international projects on formal and informal levels. SPS is taking an active role on the development of integrated chronostratigraphic databases by participating with CHRONOS and PALEOSTRAT, which are NSF funded initiatives. Vladimir Davydov is concentrating on the Permian-Triassic Time Slice Project and the development of improved taxonomic dictionaries, database sharing and manipulation with PALEOSTRAT. SPS is also involved in a core study from a drilling project of the Permian-Triassic boundary at Meishan, China; this project is an international collaboration investigating the signature and causes of the P-T extinction.

5. CHIEF ACCOMPLISHMENTS AND PRODUCTS IN 2007

GSSPs: Progress was made on the three remaining Lower Permian (Cisuralian) stage GSSPs including base-Sakmarian, base-Artinskian, and base-Kungurian. An international field excursion was conducted in early July 2007 (reported in *Permophiles* #49; p. 4-6) and samples for carbon isotopes, geochronology and biostratigraphy were collected. The geochemical samples will provide further correlation potential for the proposed GSSPs; these materials are being analyzed at Boise State University and the Nanjing Institute of Geology and Palaeontology. The biostratigraphy samples are intended to determine reproducibility of GSSP definitions. In addition the timely shipment of samples and establishment of procedures for shipping through Russian customs was a goal of this excursion in order to demonstrate accessibility. Once complete the proposals will go forward for a vote. We hope to complete

this task no later than 2009, but one or two of the three remaining proposals should be ready for a vote in 2008.

Publications: The June 2007 issue of *Permophiles* (#49) was produced at Nanjing China during June 2007 and distributed as a pdf document to a mailing list of 280. The December 2007 issue will be produced in January 2008 during a field excursion to Australia. We now have a complete series of *Permophiles* on our website (1978 to 2006).

Meetings: The SPS conducted one business meeting at the XVI International Congress on the Carboniferous and Permian in Nanjing, China in June 2007 and is reported in *Permophiles* #49.

Membership: There were no changes to the membership in 2007, but as noted in the 4 year summary we have made several changes over the past four years. We currently have 16 voting members representing Australia (2), Canada (1), China (3), France (1), Germany (1), Italy (1), Japan (1), Russia (3), and United States (3). We also have five honorary Members.

6. CHIEF PROBLEMS ENCOUNTERED IN 2007

There were no major problems in 2007. The delayed Cisuralian excursion, which was finally conducted in July 2007 meant that we could not complete the base-Sakmarian GSSP proposal in 2007 as planned.

7. SUMMARY OF EXPENDITURES IN 2007:

INCOME

Donations:	\$ 300.00
University of Calgary (1):	\$2,400.00
NIGPAS (2):	\$1,600.00
ICS:	\$ 700.00

Cisuralian Excursion(3) estimated: \$25,000.00

TOTAL: \$30,000.00 (quoted in US\$ using 1.04 as the conversion from Canadian\$)

(1) University of Calgary support from NSERC grant to Charles Henderson for travel to Nanjing.

(2) NIGPAS (Nanjing Institute of Geology and Palaeontology) support from NSFC grant to Shuzhong Shen for travel, support, printing and website costs.

(3) Costs for international participants for travel, internal costs, and shipping. These costs were borne by each participant individually.

EXPENDITURES

Printing, Mailing, and Web support <i>Permophiles</i> :	\$1,000.00
Travel support for <i>Permophiles</i> Production:	\$4,000.00
Cisuralian Excursion:	\$25,000.00

TOTAL: \$30,000.00 (quoted in US\$ using 1.04 as the conversion from Canadian\$)

BALANCE: \$0.00

8. WORK PLAN, CRITICAL MILESTONES, ANTICIPATED RESULTS AND COMMUNICATIONS TO BE ACHIEVED NEXT YEAR (2008):

1. Report of results of sampling from Cisuralian field excursion in early 2008.

2. Production of *Permophiles* #50 in Australia in January 2008.
3. Production of *Permophiles* #51 in Calgary during June 2008.
4. Completion of base-Sakmarian GSSP proposal by July 2008.
5. Business meeting to be held during 33rd IGC in August 2008 in Oslo, Norway.
6. Completion of base-Artinskian GSSP proposal by December 2008.

9. BUDGET AND ICS COMPONENT FOR 2008

EXPENDITURES

Travel to Australia and Calgary for <i>Permophiles</i> (1)	\$8,000.00
Annual Business Meeting, Oslo IGC (2)	\$9,000.00
<i>Permophiles</i> and GSSP proposals printing and postage	\$1,250.00

(1)Travel of Shen to Australia and Calgary and Henderson to Australia.

(2)Cost of travel to IGC for Executive (Henderson, Davydov, Shen)

TOTAL 2007 BUDGET **\$18,250.00**

Income

Support from University of Calgary (Henderson; NSERC)	\$6,000.00
Support from NIGPAS (Shen; NSFC)	\$8,000.00
Support from Boise State for Davydov travel (NSF)	\$3,000.00
Anticipated donations for <i>Permophiles</i>	\$ 250.00
Requested ICS contribution	<u>\$1,000.00</u>
0.00	
TOTAL BUDGET REQUEST (ICS)	<u>\$1,000.00</u>

10. REVIEW CHIEF ACCOMPLISHMENTS OVER PAST FIVE YEARS (2003-2007)

The SPS has approved the general divisions of the Permian and has now had 6 GSSP's ratified by ICS and IUGS (Asselian, Roadian, Wordian, Capitanian, Wuchiapingian, Changhsingian). Proposals for the latter two stages were published in Episodes in 2006. Support for documentation (fieldwork and publications) of the various chronostratigraphic methods for the establishment of the GSSP's has been the most outstanding and differentiating character of this Subcommittee. *Permophiles* has become an internationally respected newsletter and bears an ISSN designation (1684-5927) and is deposited in the National Library of Canada; nine issues were published during the five year period. See Accomplishments in 2007 (above) for additional details.

11. OBJECTIVES AND WORK PLAN FOR NEXT 4 YEARS (2007-2010)

The primary objective was to complete the GSSP process by 2008 although delays in the field excursion to Urals have delayed this process. We currently anticipate that the last three GSSP's (Sakmarian, Artinskian, and Kungurian) should be ratified by 2009. We anticipate the following schedule:

1. A vote by SPS on the base-Sakmarian proposal will be conducted prior to IGC in 2008.
2. Business meeting at IGC in Oslo in August 2008.
3. A vote by SPS on the base-Artinskian is anticipated during late 2008 or early 2009.
4. A vote by SPS on the Kungurian is anticipated during 2009.
5. Business meeting at International Conodont Symposium during July 2009 in Calgary.

Once this process is completed SPS will shift focus toward three directions in 2009/2010: 1. correlations into continental deposits, 2. correlations across provincial boundaries and within the Tethys region, 3. detailed documentation of the geologic evolution of the Earth during the Permian with respect to the established chronostratigraphic framework.

12. WEBSITE STATUS AND ACTIVITIES:

SPS website is located at <http://www.nigpas.ac.cn/permian/web/index.asp>. This site is updated regularly and includes all back issues of *Permophiles* in downloadable PDF format (#1 in 1978 to #49 June, 2007) as well as other information about SPS activities including annual reports, membership.... Shuzhong Shen at Nanjing China maintains the site and Henderson and Shen both have administrator rights.

13. IGC ACTIVITIES:

At this time, the only planned SPS activity is to conduct a business meeting at the 33rd IGC 5-14 August 2008. I am sure that several members will be presenting at the meeting, however.

14. FOUR YEAR SUMMARY OF ACTIVITIES:

GSSP's: The proposal for the base-Lopingian (base-Wuchiapingian) was ratified by ICS and IUGS in 2004. The proposal for the base-Changhsingian was voted and ratified by SPS in 2004. The proposal for the base-Changhsingian was voted and ratified by ICS/IUGS in 2005. The base-Wuchiapingian and base-Changhsingian (Upper Permian or Lopingian Series) GSSPs were published in Episodes (volume 29, No. 3&4) in 2006. Progress was made on the three remaining Lower Permian (Cisuralian) stage GSSPs including base-Sakmarian, base-Artinskian, and base-Kungurian. An international field excursion was conducted in early July 2007 (reported in *Permophiles* #49; p. 4-6) and samples for carbon isotopes, geochronology and biostratigraphy were collected. The geochemical samples will provide further correlation potential for the proposed GSSPs; these materials are being analyzed at Boise State University and the Nanjing Institute of Geology and Palaeontology. The biostratigraphy samples are intended to determine reproducibility of GSSP definitions. In addition the timely shipment of samples and establishment of procedures for shipping through Russian customs was a goal of this excursion in order to demonstrate accessibility. Once complete the proposals will go forward for a vote. We hope to complete this task no later than 2009, but one or two of the three remaining proposals should be ready for a vote in 2008.

Publications: The December 2003 issue of *Permophiles* (#43) was produced at Reston, Virginia in February 2004 and distributed to a mailing list of 280 from the University of Calgary later in the year. The June/December 2004 issue of *Permophiles* (#44) was produced at Pend Oreille, Idaho during October 2004 and was distributed in December 2004 from the University of Calgary. The June 2005 issue of *Permophiles* (#45) was produced at Nanjing China during June 2005 and distributed to a mailing list of 280. The December 2005 issue of *Permophiles* (#46) was produced at the University of Calgary during November 2005 and distributed as a pdf on our website. In addition the remaining back issues of *Permophiles* were scanned and added to our website providing a complete series of communications by Permophiles since 1978. The June 2006 issue of *Permophiles* (#47) was produced at Nanjing China during June 2006 and distributed as a pdf document to a mailing list of 280. The December 2006 issue of *Permophiles* (#48) was produced at the University of Calgary during November 2006 and distributed as a pdf on our website. We now have a complete series of Permophiles on our website (1978 to 2006). The June 2007 issue of *Permophiles* (#49) was produced at Nanjing China during June 2007 and distributed as a pdf document to a mailing list of 280. The December 2007 issue will be produced in January 2008 during a field excursion to Australia. We now have a complete series of Permophiles on our website (1978 to 2007).

Meetings: The SPS conducted its annual business meeting at the IGC meeting in Florence, Italy on August 23, 2004 with 23 people in attendance. This business meeting was preceded by a session on "The Lower Permian Cisuralian Stages" co-chaired by Boris Chuvashov and Charles Henderson. This was a successful session with six oral presentations and several posters that demonstrated clear progress in the definitions for the Cisuralian stages. Abstracts for these papers appear in *Permophiles* issue #44. The SPS conducted two business meetings in 2005 including at the Triassic Chronostratigraphy and Biotic Recovery meeting in Chaohu, China on May 23, 2005 with 27 in attendance and at the Non-marine Permian Conference at Albuquerque New Mexico on Oct. 23, 2005 with 28 in attendance. This latter conference was organized by Spencer Lucas and was very successful with 68 people in attendance from 12 countries. The SPS conducted one business meeting at the 2nd International Palaeontology Congress in Beijing, China in June 2006. The SPS conducted one business meeting at the XVI International Congress on the Carboniferous and Permian in Nanjing, China in June 2007 and is reported in *Permophiles* #49.

Membership: During 2004 the voting membership of SPS saw considerable renewal. We have a completely new executive and six new voting members. In order to allow this renewal, a few members were asked to retire their voting status. The SPS executive has decided to name a new membership

category, Honourary Members, to reflect the significant past and continuing contributions of these retiring voting members. The first Honourary Members are Professors Brian Glenister, Heinz Kozur, and Claude Spinosa. Honourary Members will receive GSSP proposals and be invited to comment on the merits of the proposal, but they will not vote on the proposal. The comments of Honourary Members will be included in subsequent versions of the proposal. Only one change in voting membership occurred in 2005. Professor Giuseppe Cassinis of Italy retired as a voting member and Dr. Marc Durand of Universite de Nancy, France was voted by the executive as a replacement. Two changes were made to voting membership in 2006. Dr. John Utting retired as a voting member and was named by the SPS Executive as a Honourary Member given his long service to SPS (past Secretary) and distinguished research record in Late Paleozoic palynology. Dr. Lucia Angiolini was nominated by the executive to fill this vacancy. This increased the membership from Europe bringing it more in line with other major regions. Secondly, we sadly lost our distinguished colleague and friend Professor Jin Yugan who died in June 2006 (see Permophiles 48 for a tribute). His was a very distinguished career in Late Paleozoic paleontology and service including as a past-Secretary and past-Chairman of SPS. He has been replaced as a voting member by Professor Yue Wang. There were no changes to the membership in 2007, but as noted in the 4 year summary we have made several changes over the past four years. In addition, the current executive will continue for a second term. We currently have 16 voting members representing Australia (2), Canada (1), China (3), France (1), Germany (1), Italy (1), Japan (1), Russia (3), and United States (3). We also have five honorary Members.

Summary (2004-2007): In 2004 a new SPS executive was named including Charles Henderson as Chair, Vladimir Davydov as Vice-Chair, and Shuzhong Shen as Secretary. In terms of the voting membership, nine of sixteen members are new during the reporting period (56% renewal). SPS also instituted a new membership category, Honourary Member, and five individuals have been so-named. SPS conducted five business meetings during the four-year period at major international meetings. Two GSSP proposals for the base-Wuchiapingian (also base-Lopingian Series) and base-Changhsingian were prepared, voted, ratified and published in Episodes during the past four years. Significant progress has been made on the last three Cisuralian GSSP proposals for the base-Sakmarian, base-Artinskian, and base-Kungurian stages. An international workshop was conducted in July 2007 to determine reproducibility and accessibility as well as collect new geochemical data. During the reporting period, Permophiles #43 to #49 have been produced with #50 to come later this year. In addition, a website was constructed and hosted by the Nanjing Institute of Geology and Palaeontology during the reporting period. Among other items, this website has pdf versions of all issues of Permophiles dating back to #1 in 1978.

APPENDIX

Officers and Voting Members as of November 2007

Dr. Lucia Angiolini

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Honourary Members

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Prof. Claude Spinosa
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List of Working Groups and their officers

1. Cisuralian stages; Chairman is **Boris Chuvashov**
2. Continental Permian Correlations; Chairman is **Joerg Schneider**
3. Transitional biotas as gateways for global correlation; Chairman is **Guang Shi**
4. Neotethys, Palaeotethys, and S. China Correlations; Co-Chairs are **Lucia Angiolini and Yue Wang**.
5. International Lopingian Working Group; Chairman is **Shuzhong Shen**.

REPORT

Established and Proposed GSSPs of the Cisuralian Stages are Protected

Vladimir Davydov

Permian Research Institute, Boise State University, Boise, ID, 83725

Boris Chuvashov

Institute of Geology and Geochemistry of the Uralian Branch of Russian Academy of Sciences, Ekaterinburg, Russia

Emir Gareev

Institute of Geology of the Russian Academy of Sciences, Ufa, Bashkortostan, Russia

The current and potential GSSP for the Stages of the Cisuralian Series (in ascending order, Asselian, Sakmarian, Artinskian and Kungurian) were proposed recently in the southern Urals (Davydov *et al.*, 1998; Chuvashov *et al.*, 2002a, b). The GSSP of the base of the Permian System, Cisuralian Series and Asselian Stage is established at Aidaralash Creek, Aqtobe Province, Kazakhstan. We have not received any official documents yet regarding this GSSP protection. However, few months ago Dr. Lemuza Akhmetshina from AktubNIGRI (Aktobe Scientific Petroleum Geological Research Institute) informed us that the Kazakhstan government included the several hectares of the land along Aidaralash Creek, where the Carboniferous-Permian boundary beds and established GSSP are located, as a protected area. The Kazakhstan government and regional authority at Aqtobe region are searching for funds after which they plan to build a permanent

sign that will indicate the position of the Permian System at Aidaralash Creek. Dr. Akhmetshina will keep us posted on these matters and will provide appropriate documentation when it becomes available.

In 2006, the Institute of Geology and Geochemistry, RAN Ekaterinburg and Institute of Geology of Bashkirian Academy of Sciences, Ufa, Bashkortostan submitted documentation and requested to protect areas where proposed GSSPs for the base of Sakmarian, the base of Artinskian and the base of Kungurian stages are located, *i.e.* for the potential GSSP of the base of Sakmarian Stage at Kondurovsky section, Karamurun Ridge, along the right bank of Sakmara River, Orenburg Province, Russia; the potential GSSP of the base of Artinskian Stage, Dal'ny Tulkas Road Cut section at Dal'ny Tulkas Creek near Krasnousolsk city, Gafuriysky County, Bashkortostan Republic of Russia; the potential GSSP of the base of Kungurian Stage, Mechetlino section along the right bank of Juresan' River, near Mechetlino village, Salavatsky County, Bashkortostan Republic of Russia. The very important Usolka section on the right bank of the Usolka River across from the Krasnousolsk health resort, where conodont and fusulinacean biostratigraphy of Moscovian-Sakmarian successions is exceptional and numerous volcanic ash layers are present was also included in the request. A potential GSSP for the base of the Gzhelian Stage has been proposed at Usolka section (Chernykh *et al.*, 2006).

It turns out that the Kondurovsky section on the right bank of the Sakmara River is already protected as a regional geological site. The Administration of Orenburg province (Order No. 505-r-21 May, 1998 approved this site as a geological monument "Nose-mountain". A description of this site is published in a book (reference is not available yet).

During October 2007, the government of Bashkortostan produced the order to protect three other sections, Dal'ny Tulkas